AMENDMENTS TO THE CLAIMS

1-2 (Cancelled)

3. (Currently Amended) A method for making a lithium secondary battery comprising:

forming a positive electrode by coating a lithium metal oxide on a positive current collector;

forming a negative electrode by coating carbonaceous materials or SnO_2 on a negative current collector, ~~wherein the tensile strength of the negative current collector is greater than 560 N/mm^2~~ the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less and the Cu-based alloy comprises at least ~~two~~ four materials selected from the group consisting of boron ~~in an amount of 0.0005 to 5.0 wt% of copper~~, cobalt ~~in an amount of 0.01 to 2.0 wt% of copper~~, nickel ~~in an amount of 0.8 to 4 wt% of copper~~, titanium ~~in an amount of 0.2 to 4 wt% of copper~~, magnesium ~~in an amount of 0.05 to 0.6 wt% of copper~~, tin ~~in an amount of 0.1 to 2.0 wt% of copper~~, zinc ~~in an amount of 0.0005 to 0.5 wt% of copper~~, chromium ~~in an amount of 0.0005 to 0.5 wt% of copper~~, manganese ~~in an amount of 0.1 to 1.0 wt% of copper~~, iron ~~in an amount of 0.01 to 2.0 wt%~~, vanadium ~~in an amount of 0.0005 to 0.5 wt% of copper~~, aluminum ~~in an amount of 0.005 to 0.5 wt% of copper~~, zirconium ~~in an amount of 0.0005 to 0.5 wt% of copper~~, niobium ~~in an amount of 0.0005 to 0.5 wt% of copper~~, and bismuth ~~in an amount of 0.0005 to 0.5 wt% of copper~~, wherein at least three of the four materials are nickel, titanium and magnesium and the Cu-based alloy further comprises a copper-based material selected from the group consisting of copper, copper/nickel, copper/titanium, and copper/nickel/titanium, wherein the Cu-based alloy is produced by a plating process into a foil shape;

interposing a separator between the positive and negative electrodes; and

injecting an electrolyte to immerse the positive and negative electrodes and the separator.

4-7. (Cancelled)

8. (Currently Amended) ~~The lithium secondary battery of claim 4~~ A lithium secondary battery comprising:

a positive electrode formed by coating a lithium metal oxide on a positive current collector;

a negative electrode formed by coating at least one of carbonaceous materials and SnO_2

on a negative current collector where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least three materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, silicon in an amount of 0.1 to 0.5 wt% of copper, iron in an amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, phosphorous in an amount of 0.02 to 0.16 wt% of copperand bismuth in an amount of 0.0005 to 0.5 wt% of copper, wherein the copper-based alloy is produced by a plating process into a foil shape;

a separator interposed between the positive and negative electrodes; and

an electrolyte into which the positive and negative electrodes and the separator are immersed, wherein the at least three materials comprise nickel, titanium, and magnesium.

9. (Currently Amended) ~~The lithium secondary battery of claim 6~~ A lithium secondary battery comprising:

a positive electrode formed by coating a lithium metal oxide on a positive current collector;

a negative electrode formed by coating at least one of carbonaceous materials and SnO_2 on a negative current collector where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least three materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, silicon in an amount of 0.1 to 0.5 wt% of copper, iron in an

amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, phosphorous in an amount of 0.02 to 0.16 wt% of copperand bismuth in an amount of 0.0005 to 0.5 wt% of copper, wherein the copper-based alloy is produced by a plating process into a foil shape;

a separator interposed between the positive and negative electrodes; and

an electrolyte into which the positive and negative electrodes and the separator are immersed, wherein the at least three materials comprise at least four materials and ~~wherein~~ the at least four materials comprise nickel, titanium, magnesium, and manganese.

10. (Currently Amended) ~~The lithium secondary battery of claim 6~~ A lithium secondary battery comprising:

a positive electrode formed by coating a lithium metal oxide on a positive current collector;

a negative electrode formed by coating at least one of carbonaceous materials and SnO_2 on a negative current collector where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least three materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, silicon in an amount of 0.1 to 0.5 wt% of copper, iron in an amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, phosphorous in an amount of 0.02 to 0.16 wt% of copperand bismuth in an amount of 0.0005 to 0.5 wt% of copper, wherein the copper-based alloy is produced by a plating process into a foil shape;

a separator interposed between the positive and negative electrodes; and

an electrolyte into which the positive and negative electrodes and the separator are

immersed, wherein the at least three materials comprise at least four materials and~~, wherein~~ the at least four materials comprise nickel, titanium, magnesium, and zinc.

11-13. (Cancelled)

14. (Currently Amended) ~~The lithium secondary battery of claim 10,~~ A lithium secondary battery comprising:

a positive electrode formed by coating a lithium metal oxide on a positive current collector;

a negative electrode formed by coating at least one of carbonaceous materials and SnO_2 on a negative current collector where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least three materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, silicon in an amount of 0.1 to 0.5 wt% of copper, iron in an amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, phosphorous in an amount of 0.02 to 0.16 wt% of copperand bismuth in an amount of 0.0005 to 0.5 wt% of copper, wherein the copper-based alloy is produced by a plating process into a foil shape;

a separator interposed between the positive and negative electrodes; and

an electrolyte into which the positive and negative electrodes and the separator are immersed, wherein the at least three materials comprise at least four materials and the at least four materials comprise nickel, titanium, magnesium, and zinc, wherein the amount of nickel is 0.8 to 4 wt% of the copper, the amount of titanium is 0.2 to 4 wt% of the copper, the amount of magnesium is 0.05 to 0.6 wt% of the copper, and the amount of zinc is 0.0005 to 0.5 wt% of the copper.

15-22. (Cancelled)

23. (Currently Amended) ~~The method of claim 19,~~ A method for making a lithium secondary battery comprising:

forming a positive electrode by coating a lithium metal oxide on a positive current collector;

forming a negative electrode by coating at least one of carbonaceous materials and SnO_2 on a negative current collector where the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less, and the Cu-based alloy including at least three materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, silicon in an amount of 0.1 to 0.5 wt% of copper, iron in an amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, phosphorous in an amount of 0.02 to 0.16 wt% of copperand bismuth in an amount of 0.0005 to 0.5 wt% of copper, wherein the copper-based alloy is produced by a plating process into a foil shape;

interposing a separator between the positive and negative electrodes; and

injecting an electrolyte to immerse the positive and negative electrodes and the separator, wherein the at least three materials comprise nickel, titanium, and magnesium.

24. (Currently Amended) ~~The method of claim 21,~~ A method for making a lithium secondary battery comprising:

forming a positive electrode by coating a lithium metal oxide on a positive current collector;

forming a negative electrode by coating at least one of carbonaceous materials and SnO_2 on a negative current collector where the negative current collector is made of a Cu-based alloy

with a thickness of 20 μm or less, and the Cu-based alloy including at least three materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, silicon in an amount of 0.1 to 0.5 wt% of copper, iron in an amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, phosphorous in an amount of 0.02 to 0.16 wt% of copperand bismuth in an amount of 0.0005 to 0.5 wt% of copper, wherein the copper-based alloy is produced by a plating process into a foil shape;

interposing a separator between the positive and negative electrodes; and

injecting an electrolyte to immerse the positive and negative electrodes and the separator, wherein the at least three materials comprise at least four materials and ~~wherein~~ the at least four materials comprise nickel, titanium, magnesium, and manganese.

25. (Currently Amended) ~~The method of claim 21,~~ A method for making a lithium secondary battery comprising:

forming a positive electrode by coating a lithium metal oxide on a positive current collector;

forming a negative electrode by coating at least one of carbonaceous materials and SnO_2 on a negative current collector where the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less, and the Cu-based alloy including at least three materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, silicon in an amount of 0.1 to 0.5 wt% of copper, iron in an amount of 0.01

to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, phosphorous in an amount of 0.02 to 0.16 wt% of copperand bismuth in an amount of 0.0005 to 0.5 wt% of copper, wherein the copper-based alloy is produced by a plating process into a foil shape;

interposing a separator between the positive and negative electrodes; and

injecting an electrolyte to immerse the positive and negative electrodes and the separator, wherein the at least three materials comprise at least four materials and ~~wherein~~ the at least four materials comprise nickel, titanium, magnesium, and zinc.

26. (Currently Amended) A lithium secondary battery comprising:

a positive electrode formed by coating a lithium metal oxide on a positive current collector;

a negative electrode formed by coating at least one of carbonaceous materials and SnO_2 on a negative current collector ~~wherein the tensile strength of the negative current collector is greater than 560 N/mm^2,~~ where the negative current collector is made of a copper-based alloy foil with a thickness of 20 μm or less, and the copper-based alloy foil includes at least ~~three~~ four materials selected from the group consisting of boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, and zinc in an amount of 0.0005 to 0.5 wt%, wherein at least three of the four materials are nickel, titanium and magnesium;

a separator interposed between the positive and negative electrodes; and

an electrolyte into which the positive and negative electrodes and the separator are immersed.

27-28. (Cancelled)

29. (Currently Amended) The lithium secondary battery of one of claims 4 8, 9, 10 or 14, wherein the copper-based alloy foil is produced by an electro-plating process.

30. (Currently Amended) The method of one of claims ~~19~~23, 24 or 25, wherein the copper-based alloy foil is produced by an electro-plating process.

31. (Previously Presented) The lithium secondary battery of claim 26, wherein the copper-based alloy foil is produced by an electro-plating process.

32. (Currently Amended) A lithium secondary battery comprising:

a positive electrode formed by coating lithium metal oxides on a positive current controller;

a negative electrode formed by coating carbonaceous materials or SnO_2 on a negative current collector ~~wherein the tensile strength of the negative current collector is greater than 560 N/mm^2;~~ the negative current collector being formed of a copper-based alloy foil with a thickness of 20 μm or less and the copper-based alloy including ~~at least one material selected from the group consisting of~~ magnesium in an amount of 0.05 to 0.6 wt% of copper~~, boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, bismuth in an amount of 0.0005 to 0.5 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, chromium in an amount of 0.0005 to 0.5 wt% of copper and manganese in an amount of 0.1 to 1.0 wt% of copper~~ and further comprises a copper-based material ~~selected from the group consisting of copper, copper/nickel, copper/titanium, and~~ comprised of copper/nickel/titanium, wherein the copper-based alloy is produced by a plating process into a foil shape;

a separator interposed between the positive and negative electrodes; and

an electrolyte into which the positive and negative electrodes and the separator are immersed.

33-35. (Cancelled)

36. (New) The method of claim 3, wherein the copper-based alloy includes boron in an amount of 0.0005 to 5.0 wt% of copper, cobalt in an amount of 0.01 to 2.0 wt% of copper, nickel in an amount of 0.8 to 4 wt% of copper, titanium in an amount of 0.2 to 4 wt% of copper, magnesium in an amount of 0.05 to 0.6 wt% of copper, tin in an amount of 0.1 to 2.0 wt% of copper, zinc in an amount of 0.0005 to 0.5 wt% of copper, chromium in an amount of 0.0005 to

0.5 wt% of copper, manganese in an amount of 0.1 to 1.0 wt% of copper, iron in an amount of 0.01 to 2.0 wt%, vanadium in an amount of 0.0005 to 0.5 wt% of copper, aluminum in an amount of 0.005 to 0.5 wt% of copper, zirconium in an amount of 0.0005 to 0.5 wt% of copper, niobium in an amount of 0.0005 to 0.5 wt% of copper, and bismuth in an amount of 0.0005 to 0.5 wt% of copper.